EXHIBIT 12

FILED UNDER SEAL

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

GOOGLE LLC,	CASE NO. 3:20-cv-06754-WHA
Plaintiff,	Related to CASE NO. 3:21-cv-07559-WHA
v.	
SONOS, INC.,	
Defendant.	

OPENING EXPERT REPORT OF SAMRAT BHATTACHARJEE REGARDING INVALIDITY OF U.S. PATENT NOS. 10,779,033 AND 9,967,615 AND OTHER ISSUES

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> can then make a request to a Sonos server in the cloud to determine the zone groups on which music can be played."

Id. at 16:16-27, 16:49-58, 16:59-67, 17:17-16 (emphasis added).

689.   A person of skill in the art would understand that the disclosures regarding a local playback queue cannot disclose a remote playback queue. The patent does not disclose the "local playback queue" being stored in a cloud queue. Rather, in discussing the "local playback queue" the patent states that it is the queue of the "local playback system" (i.e., the queue provided by the Sonos controller to the Sonos music system). '033 patent at 16:49-63. And earlier applications in the family claim a "local playback queue" (see, e.g., '615 patent at Claim 1), which further underscores the fact that a "remote playback queue" is something different than the "local playback queue."

690.   A POSITA would also not conclude that the inventors were in possession of a cloud queue system based on a single mention of the term "shared queue." The only discussion of the shared queue reads: "In certain embodiments, a shared queue is provided between the local playback system and the third-party application to keep the local system and application synchronized." '033 patent at 16:62-64. This disclosure appears in a paragraph of the patent that begins by explaining that the "third party application" can "override a local playback queue with its own application-specific queue," and the patent then concludes by referring to the "shared queue" as an alternative embodiment. *Id.* at 16:59-67. A POSITA would thus understand that at best this disclosure refers to the ability for the local playback system to include a queue that is shared between the third-party application and the local playback system. The disclosure does not identify the shared queue as being stored in the cloud.

691.   The only other queue disclosed in the specification is a queue that the user is editing and managing in a third-party application. To the extent there is written description support for

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the term "remote playback queue" at all, that description would only support a playback queue in a third-party application. For example, Figure 7 of the patent is shown below:
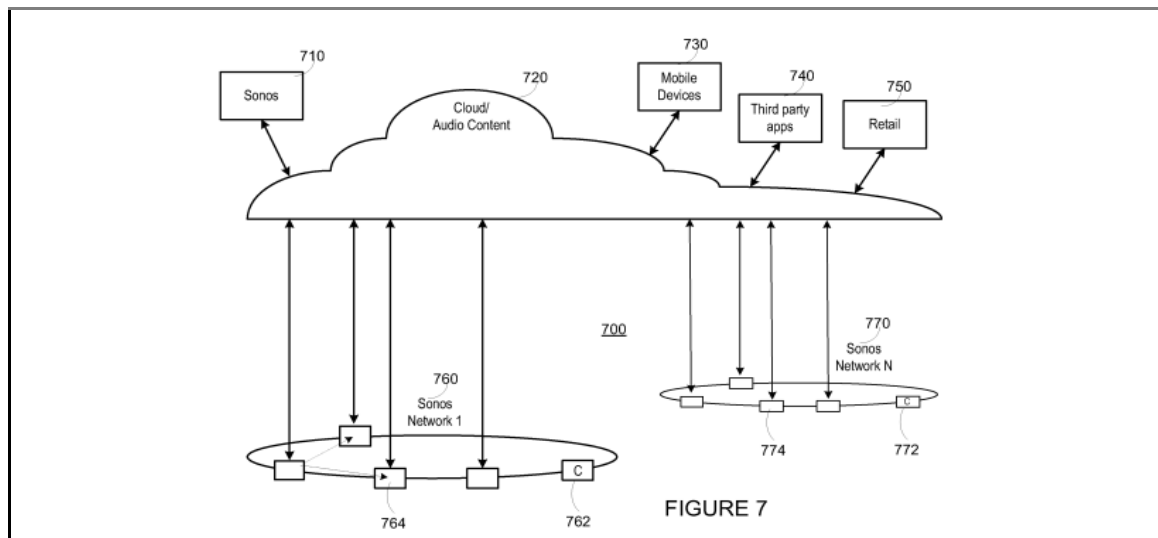

FIGURE 7

Figure 7 discloses a local playback system (e.g., Sonos Network 1), such as a Sonos media playback system that includes multiple Sonos playback devices (e.g., 764) and a Sonos controller (e.g., 762). *Id.* at Fig. 7. Figure 7 also discloses a third-party application (740), such as a Spotify and Rhapsody application on a user's mobile phone. *Id.* at 12:27-40, 12:41-64, 12:41-46, 13:20-27. The application can be a browser-based application or an application on a mobile phone. *Id.* at 12:4-15; see also id. at 15:64-16:4.

692.   The specification teaches that "[a] connection between the third-party application and the local playback device (e.g., Sonos Zone player) can be direct over a local area network (LAN)" or it can be "remote through a proxy server in the cloud." *Id.* at 15:64-16:4. In Figure 7, the connection is shown as remote through a proxy server that would exist in the cloud (720). *Id.* at Fig. 7. Thus, the "queue that the user is editing/managing in the third-party application" can be played back on the Sonos network by passing a URI (e.g., a URL or song-identifier) to the Sonos player on the Sonos network through a proxy server in the cloud, which URI could then be used

to retrieve the media content from the cloud. *Id.* at 12:41-64, 16:16-28. For instance, "[a] third party application can open or utilize an application programming interface (API) to pass music to the household playback system without tight coupling to that household playback system." *Id.* at 12:41-64. Thus, a POSITA would understand that the third-party application can utilize an API to pass a URI (e.g., a song identifier or URL) for the tracks in the queue of the third-party application to the local playback system. The local playback system can then retrieve the tracks from a content server in the cloud using the URI.

693.   Accordingly, to the extent there is written description support for a "remote playback queue" in the '033 patent, it at most supports a scope limited to a playback queue in a third-party application. There is no written description for the broader interpretation that Sonos is seeking. The other queues described in the patent are clearly not the "remote playback queue."

694.   My opinion that the specification does not provide written description support for the "remote playback queue" limitation is further supported by Sonos's Australian Patent Application No. 2020239784 ("the '784 Application"). *See* GOOG-SONOSNDCA-00117613. The '784 Application includes essentially the same written description and figures as the '033 patent. Like the '033 patent, the claims of the '784 Application also recites a "zone player [] accept[s] playback responsibility for a remote playback queue," and that it is a "remote playback queue from a cloud-based media service."   *See* GOOG-SONOSNDCA-00117645 (Claim 1); Compare '033 patent at Claim 1 (claiming "one or more playback devices" that are "available to accept playback responsibility for the remote playback queue," and that "playback responsibility for the remote playback queue" is "transferred from the computing device to the at least one playback device").

- "In terms of [a] playback system, [a] person skilled in the art would understand the term 'remote' to mean a system unconnected or with little relationship to an initial system." (GOOG-SONOSNDCA-00117429)

- "The 'remote playback queue' referred to in claim 1 corresponds to the 'queue that the user is editing/managing in the third party application' as described at [89] of the application as filed. . . . Thus, the geographical location of the mobile device running the third party application is not determinative as to whether the third party application is remote with respect to the local playback queue." (GOOG-SONOSNDCA-00117422)

- "It is therefore submitted that, to a person skilled in the art, the meaning of the remote playback queue would clearly be the playback queue that the user is managing in the third party application." (GOOG-SONOSNDCA-00117422)

697.   My opinion that Sonos was not in possession of a "remote playback queue" to the extent the term encompasses a cloud queue is supported by the fact that Sonos has not implemented a working example of the claimed invention in the Asserted Claims of the '033 patent. For example, in response to Google's Interrogatory No. 13 asking Sonos to identify all Sonos products that practice the Asserted Claims of the '033 patent, Sonos responded that "Sonos is not aware of any Sonos product that practices any claim of [] the '033 patent." 11-08-2022 Sonos's Fourth Supplemental Response to Google's First Set of ROGs at 271.

698.   My opinion is also supported by the fact that Sonos's witnesses have testified that Sonos was not in possession of a cloud queue at the time of the alleged invention in 2011.

699.   For instance, Tad Coburn, a named inventor of the '033 patent, testified that Sonos had not implemented a cloud queue at the time of the alleged invention of the '033 patent in 2011. In particular, he admitted that the first implementation of a cloud was the work Sonos did with Google in 2013:

> Q.   In 2013, had Sonos ever implemented a cloud queue design to play music from an application directly to Sonos speakers?

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> A.   We had not implemented it, no, prior to the Google collaboration. We had discussed it many times, but we had not actually implemented.

7-12-2022 Coburn Tr. at 30:2-7.

> Q.   -- Sonos had never implemented a cloud queue solution with any partner, or otherwise, correct?

> A.   We had -- prior to 2013, we had not created a -- we had not worked with any partners to create a working implementation of a cloud queue, correct.

7-12-2022 Coburn Tr. at 56:2-9.

700.   Similarly, former Sonos engineer Keith Corbin testified that at the time of the alleged invention of the '033 patent Sonos's products used a local queue stored on the playback device. Keith Corbin 05.31.2022 Dep. Final Tr. at 29:11-17 ("Q. Can a queue be stored kind of locally on the device? A. At that point in 2011, the queue was generally stored locally on the device. Q. When you say the device, is that stored locally on the controller? A. It was stored on the player."), 29:24-30:16 ("Q. Okay. So there was this local queue on the zone player and I guess my question is how was that implemented? Do you know? . . . A. It was code on the players that would maintain the list of tracks to be played. Q. So like if I have six songs, the zone player would also maintain its list of tracks in the global queue? A. Yes. Q. And if I had a thousand songs, then those thousand songs would remain locally on the zone player? A. Yes."). Mr. Corbin further testified that he was not aware of Sonos having a cloud queue API in 2011, and that his first awareness of Sonos implementing a cloud queue was as part of the collaboration with Google that began several years later (which I discuss further below in Section XVII):

> Q. When was the first time you heard of Sonos 3 implementing the Cloud Queue API?

> A I don't remember when that would have been.

> Q Okay. You're aware that Sonos developed the Cloud Queue API as part of its integration with Google?

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A. I think we talked about that earlier. I'm aware that we did an implementation of it that -- as part of the Play to Sonos work that we did with Google, yes.

Q And prior to the Play to Sonos work that you did with Google, had you heard of the Sonos having Cloud Queue API?

A Not that I'm aware of.

Id. at 36:2-17.

Q So in 2011 if I told you: I want to pass the beer test, in your mind, you wouldn't put that to mean that I want a Cloud Queue?

A In 2011, the way we did that was through SMAPI. And we had SMAPI based integrations that would pass the beer test.

Q Okay.

A I don't remember the dates where we first did the initial -- there was an initial integration that did this style that was done with QQ, then Google started. I don't remember the timelines of each of those or when Cloud Queue specifically happened, but in 2011, passing the beer test meant a SMAPI integration. That's what we had in 2011.

Q Okay. It did not [mean a] Cloud Queue integration?

A In 2011, correct.

Id. at 56:8-24.

Q Prior to Google Play Music, did Sonos have Cloud Queue -- let me make sure. I thought we talked about prior to Google Play Music, you're not aware of having Sonos developing a Cloud Queue API?

A The best of my recollection is that Google was the first implementation of that on top of those APIs. Whether the APIs were actually developed, don't remember.

Id. at 88:8-16; *see also id*. at 35:20-25 ("Q. And I guess going back in February of 2011, you were

not aware of Sonos having any Cloud Queue API? A. I was not aware of it in February of 2011,

no.").

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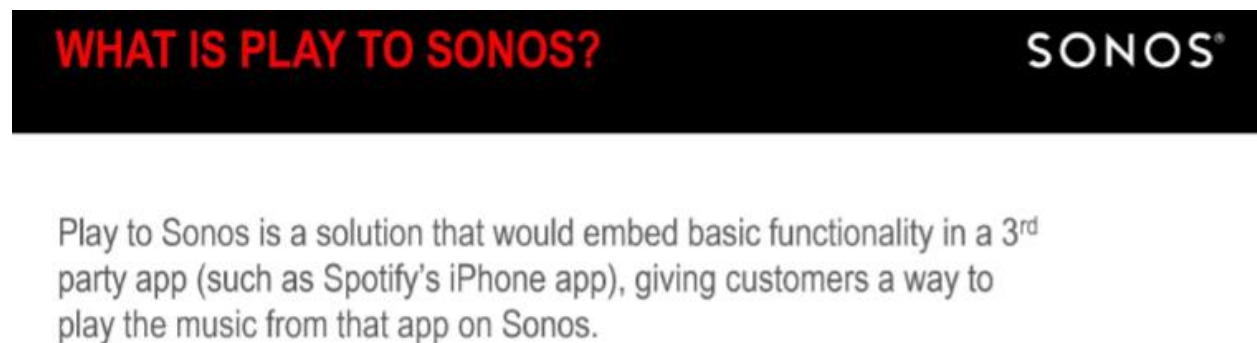
701.   Similarly, Jeff Torgerson, a Principal Product Manager, for Sonos also testified that Sonos has not implemented a cloud queue prior to the collaboration work with Google that began in 2013:

> Q.   So to your knowledge, prior to the Google collaboration, Sonos had not integrated with any partner using cloud queue?
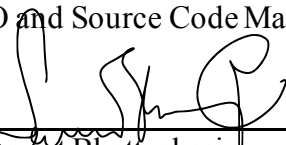>
> A.   I don't recall any, correct.

8-11-2022 Jeff Torgerson Tr. at 57:7-12.

702.   My opinion is also supported by Sonos's response to Google's Interrogatory No. 1. In its response, Sonos claims that the invention of the '033 patent was conceived by July 15, 2011 when Tad Coburn and Joni Hoadley came up with the "Direct Control" idea, which was "referred to internally at Sonos as 'Play to Sonos.'" 11-08-2022 Sonos Fourth Supp. Response to Google's First Set of ROGs. *Id.* at 103. The '033 patent also refers to "Play to Sonos" ('033 patent at 13:60-67), which Sonos's documents explain is the idea of playing media to Sonos using a third-party application:

WHAT IS PLAY TO SONOS?   **SONOS**

Play to Sonos is a solution that would embed basic functionality in a 3rd party app (such as Spotify's iPhone app), giving customers a way to play the music from that app on Sonos.

Indeed, Tad Coburn testified that Play to Sonos was the ability to play a queue provided by a third-party application on the Sonos media system, "without the user having to go through the Sonos app." SONOS-SVG200038476 (10-5-2017 Coburn Tr.); 7-12-2022 Coburn Tr. at 167:22-168:12 ("play to Sonos is the general feature whereby a – a third-party music app; i.e., an app – a third party

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